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ABSTRACT

A study investigated whether, when second language learners engage in second-language interaction, opportunities to comprehend and produce the second language are conditioned by their gender and/or the correspondence between their gender and that of the interlocutor. The interactions of a native speaker (NS) and a non-native speaker (NNS) in same- and cross-gender dyads were analyzed in four information exchange tasks. Subjects were 12 male and 20 female native speakers of American English and 17 male and 15 female native speakers of Japanese learning English as a Second Language, all at the low-intermediate level. Results did not show a clear-cut role for NNS gender as a discriminating factor in frequency of negotiated interaction and its associated opportunities for comprehension of input, feedback on production, and modification of output. What emerged from testing of hypotheses was a complex interaction of both gender and task type in providing and inhibiting these opportunities. The framework for coding data on negotiated interactions and a diagram of one of the tasks are appended, and a 52-item bibliography is included. (MSE)

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# Language Learning through Interaction: What Role does Gender Play?[1]

**Teresa Pica, Dom Berducci, Lloyd Holliday, Nora Lewis, Jeanne Newman**

This investigation of Native Speaker with Non-Native Speaker (NS-NNS) interaction in same and cross-gender dyads on four information exchange tasks revealed that male and female NNSs make and receive comparable opportunities to request $L_2$ input and modify interlanguage output during interaction with female NSs. During interaction with male NSs, these opportunities are significantly lower for female than male NNSs. In addition, more request-response exchanges are found on tasks in which either NS or NNS is given initial control over task related information. Findings of the study are attributed to cultural similarities and differences in the interactional behaviors of the participants.

## Introduction: Purpose of the Study

The relationship between language and gender has become an important thrust of research in a variety of disciplines, most notably linguistics, anthropology, and sociology. Several lines of research have been undertaken: Studies have compared the language spoken to and produced by men vs. women. Investigations have been made into gender-based differences in the structure of social interaction. The impact of this research on second language ($L_2$) teachers and researchers has been to heighten their sensitivity to possible ways in which the gender of learners might influence their $L_2$ access and exposure and their linguistic performance on classroom tasks, research interviews, and other domains of discourse.

In spite of this heightened sensitivity to gender, research has only recently begun to examine how, and indeed, *whether*, learners' gender affects their $L_2$ access and performance in ways which might impact on their language learning. The few studies which have addressed these questions, (e.g., Gass and Varonis, 1986; Markham, 1988; Pica, Holliday, Lewis, and Morgenthaler, 1989) have begun to shed light on gender-related differences in areas such as learners' strategies for $L_2$ comprehension, their modification of interlanguage, and their interactional moves with $L_2$ interlocutors. In view of the theoretical importance which has been given to $L_2$ comprehension, interlanguage modification, and negotiated interaction in the learning process, findings from these studies raise the possibility that language learning opportunities and experiences may not be quite the same for male and female learners. To further explore this possibility and to add to the small body of research on learner gender, the present study was undertaken.



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The study was framed by the following question: When learners engage in $L_2$ interaction, are their opportunities to comprehend and produce the $L_2$ conditioned by their gender and/or by the correspondence between their gender and that of their interlocutor? To address this question, we compared ways in which male and female non-native speakers of English (NNSs) and native speakers of American English (NSs) in same and cross-gender dyads (1) requested and received help in comprehending and responding to new and unfamiliar $L_2$ input and (2) responded linguistically to explicit and implicit feedback on their production, as they worked on oral, information-exchange tasks.

## Background to the Research

### Theoretical Interest in Interaction as an Aid to Second Language Learning

This research was framed within the perspective of current second language acquisition (SLA) theory. Learners' comprehension and production of $L_2$ are claimed to be essential to their internalization of $L_2$ rules and structures. Further, their participation in social interaction with interlocutors is seen as the context in which the $L_2$ can best be comprehended and produced.

Claims regarding the contributions of comprehension to language learning (originating with Krashen, 1980 and Long, 1980; 1983; 1985) are based on both argument and evidence that exposure to a language is not sufficient for its acquisition. Thus, in order to recognize and eventually internalize $L_2$ forms and structures, learners must first understand the meaning of utterances which these forms and structures encode.

Claims regarding the role of production in the learning process are based on observations (Swain, 1985) that learners' $L_2$ comprehension in itself does not appear to be sufficient for their acquisition of $L_2$ forms and structures. Swain notes that it is often possible for learners to understand the meaning of an utterance without reliance on or recognition of its morphology or syntax. To convey meaning, however, learners must be able to structure and organize their output. Thus she argues that learners must be given opportunities to refer linguistically to agents, actions, and objects and to express relationships among them if they are to master $L_2$ morphosyntax.

For Schachter (1983; 1984; 1986), learners' production is also important because it provides a basis from which they can receive input in the form of feedback on the clarity and precision of their interlanguage. This feedback can then be used by a learner in modifying interlanguage morphosyntactic rules and features toward an $L_2$ target. These experiences in $L_2$ production, as described by Swain and Schachter, appear to help learners manipulate and modify their interlanguage in ways which have an impact on their internalization of $L_2$ forms and structures.

These theoretical claims regarding the contributions of comprehension and production to $L_2$ learning have also viewed learners' participation in social interaction as the context in which their

comprehension and production can best be served. As Long has argued, (1980, 1983, 1985) what are especially important are opportunities for learners to engage with their interlocutors in a negotiated exchange of message meaning. During negotiation, both learners and interlocutors can check the comprehensibility of what they themselves say, request clarification, confirmation, or reiteration of what the other has said, and modify and adjust their speech toward greater clarity and comprehensiblity. In this way, they can potentially reach mutual understanding through modifications of and adjustments to the sounds, structures, and vocabulary of their responses.

Three examples of negotiated interaction are shown below. The first one appears to have been motivated by the learner's need for greater clarity, the following two, by the NS's need for clarity.

| | English $L_2$ Learner: | English NS Interlocutor: |
|---|---|---|
| (1) | okay, with a big chimney | |
| | | what is chimney? |
| | chimney is where the smoke comes out of | |
| (2) | around the house we have glass<br>uh grass, plants and grass | you have what? |
| (3) | you have a three which is ...white<br>square of which appears sharp<br>you have a three houses ...<br>one no-no-not- one is not square<br>and one is square | huh? |

As these examples illustrate, negotiation has an immediate impact on learners' receptive and expressive experiences in an $L_2$. Request-response exchanges such as (1) offer learners opportunities to hear $L_2$ input modified and adjusted to their comprehension needs and exchanges such as (2) and (3) provide them with feedback through which they can modify and adjust their output both semantically and structurally. One additional contribution of negotiated interaction is that it provides the learners with modified $L_2$ input which contains information on structural relationships within the $L_2$. In excerpt (1), for example, the NS modification reveals that *chimney* can be both object of the preposition *with* and subject of the utterance *chimney is where the smoke comes out of*. Such structural relationships have already been described in research on mothers' input to their children (See Hoff-Ginsburg, 1985) and are being explored in current $L_2$ studies by Holliday (in preparation) and Pica, Holliday, and Lewis (1990).

## Research on Language and Gender

Until recently, there has been relatively little empirical work on language and gender due to the long-abiding acceptance of popular stereotypes about male and female speech patterns. In Western societies, for example, it was held widely, but erroneously, that women's speech was a deviant version of the speech used by men. It was assumed to contain a smaller, yet more emotionally laden vocabulary (Jespersen, 1922), and to be simpler, more fragmented, non-assertive, and excessively polite (Lakoff, 1973). However, over the past decade, researchers have

shown a great deal of interest in language and gender, much of it in response to the claims of Jespersen and Lakoff. Researchers have addressed questions pertaining to the relationship between language and gender by looking for differences in several areas:

(1) Characteristics of the language used to refer to men and women. Relevant research has ranged from studies regarding perceptions of males and females associated with the generic pronouns *he* and *they* (Frank and Anshen, 1983; Mackay and Fulkerson, 1979; Martyna, 1978), to work on the frequency and type of metaphoric and derogatory language used to describe females compared to males (e.g., by Spender 1980), to surveys on the prevalence of sexism in language teaching materials (Hartman and Judd 1978, Porreca 1984).

(2) Phonological, lexical, morphosyntactic, and discoursal features of the language used by men and women (for example, by Labov, 1966 and 1984; and Wolfram, 1969 in the U.S.; Keenan, 1974 in Malagasy; and Trudgill, 1972 in Britain).

(3) Speech behaviors in evidence when men and women address each other in speech events (See, e.g., work by Brouwer, Gerritsem and deHaan, 1979 on ticket-selling transactions) and as they carry out speech acts (See Wolfson and Manes, 1978 and 1980; and Wolfson ,1984 on compliments ).

(4) Features of interaction such as topic initiation and control (Fishman, 1983), floor holding and turn taking (Edelsky, 1981), or interruptions and repair (Zimmerman and West, 1975).

A number of studies on language and gender has shown that gender in itself is not necessarily responsible for differences in features of language used by and addressed to men and women. Rather, perceptions about social status, expertise, and control over valued information appear to play a more important role than gender itself in much of the speech behavior of males and females and in the judgements made about it. Among the most illustrative studies are those of O'Barr and his associates (Conley, O'Barr, and Lind 1978, Lind, O'Barr, et al. 1979, O'Barr and Atkins 1980). Their comparisons of the speech of male and female courtroom witnesses have uncovered no gender-related differences among them. Instead differences in the witnesses' speech patterns appear to be based on whether they are experts or non-experts on the area for which they have been asked to testify. Thus, the data on *both* male and female non-expert witnesses revealed hesitation and fragmentation phenomena generally associated with female speech (cf. Lakoff 1973, above) whereas *neither* the male nor female expert witnesses displayed these speech patterns. In the courtroom context, and perhaps other contexts as well, expertise and control over relevant information seemed to have a more powerful influence than gender on certain aspects of speech behavior.[2]

Research on Second Language and Gender

The research outlined above has given a more critical perspective to popular notions about males, females, and language and has provided insight into gender-related constraints on the behaviors of native speakers of individual languages in particular societies and specific social events. Findings from this research are of great relevance to language learners and their teachers with regard to the linguistic rules and patterns of speech behavior expected in $L_2$ contexts to which the learners seek access. As noted earlier, however, only a small amount of research on language and gender has focused directly on language learners themselves as they attempt to produce and understand a second language. Among these are the above-mentioned studies by Markham (1988), Gass and Varonis (1986), Pica et al. (1989) which are now reviewed in greater detail since they have provided an impetus for the present study.

Markham, in researching English $L_2$ listening comprehension, found that the gender of the NS lecturer affected NNSs' recall of information. Recall was greater for lectures delivered by male NSs than by female NSs. He found, however, that this gender bias could be neutralized by introducing an "expertness" factor. Thus, recall of information was much greater with an "expert" female speaker than with a non-expert female speaker, a finding which is reminiscent of the native speaker research by O'Barr and associates discussed above.

Two $L_2$ interaction-based studies (Gass and Varonis, 1986; Pica et al., 1989) have also helped to illuminate the impact of interlocutor gender on the learner. These studies revealed that the pairing of learners with interlocutors of same or opposite gender conditioned both the number of opportunities and degree of success that male learners achieved in modifying their production compared with female learners. However, the extent of cross-gender sampling in both studies was insufficient to warrant gender-based generalizations about language learning. Gass and Varonis (1986) studied learners interacting exclusively with other learners and not with native speakers. Pica et al. (1989) restricted their comparison of male and female learners to interactions with female native speakers and did so only through post hoc analysis of results for a study whose original purpose had nothing to do with gender. Results of the studies by Gass and Varonis and Pica et al. (1989) thus suggested a need for expanded research on the possible relationships between the gender of learners and the language learning opportunities given to and taken by them during their interactions with interlocutors. The present study was designed to address this need.

## Research Design

Subjects

Subjects included 12 male and 20 female native speakers of American English (NSs) and 17 male and 15 female Japanese L1 speakers learning English $L_2$ (NNSs), all low-intermediate level, within a 400 range on the TOEFL examination. Subjects from the same first language ($L_1$) and

similar $L_2$ achievement scores were targeted to control for $L_1$ background and $L_2$ placement variables as closely as possible. The subjects were recruited primarily from a large urban university and its surrounding community. NNSs included students from a preacademic English language institute. NSs came from a variety of academic and employment backgrounds, but were predominantly graduate and undergraduate students and trained workers and professionals. In an effort to provide a degree of uniformity among the NSs, mothers and persons experienced in dealing with NNSs were excluded from the study.

Based on subjects' availability for taping, they were arranged by the researchers into the following dyads: Ten same-gender dyads, consisting of 5 female NSs - 5 female NNSs, 5 male NSs - 5 male NNSs and 10 cross-gender dyads, consisting of 5 female NSs - 5 male NNSs and 5 male NSs - 5 female NNSs. The larger number of subjects than dyads reflects conditions under which data were collected for the study. Ten of the female NSs had participated in an earlier study with 5 male and 5 female NNSs which involved three communication tasks, to be described below. Since data on one additional task was required for the present study, it was necessary to include ten additional female NSs interacting with five additional male and female NNSs on the additional task. In a few cases, newer subjects were unable to participate in all four tasks; this required additional subjects for remaining tasks. In forming the ten same and ten cross-gender dyads for analysis, the researchers matched the NNSs subjects according to their TOEFL scores. For example, Yoko, who had scored 463 on TOEFL and interacted with Alice on three of the four tasks was matched with Nari, whose TOEFL was 450, and NS partner Mary. Thus, data on these 2 NNS and 2 NS subjects were combined into one NNS-NS dyad for purposes of analysis .

Data Collection Procedures

All subject dyads participated in two rounds of each communication task, distributed randomly to control for the possible influence on results of task ordering or practice effects. These tasks are described below. The researchers introduced the subject dyads to each other and reviewed instructions for taping. The dyads then worked independently of the researchers during the tasks. These dyadic interactions were taped. Data from the second round of tasks were transcribed, coded, and analyzed for purposes of the present study.

Three communication task types and four tasks altogether were used in data collection. These tasks provided a context for predicting and observing how learners could gain opportunities to (1) obtain and make use of their interlocutor's help in understanding unfamiliar input needed for interlanguage development and (2) respond to their interlocutors' requests for greater clarity and comprehensibility of their interlanguage output, the second necessary factor in SLA from the interactionst perspective. The tasks were designed to provide subjects with different degrees of control over the information needed to carry them out. It was believed that as they needed to

request or supply information, the subjects would adjust their speech to reach mutual understanding.

Tasks

(a) **Two Information Gap tasks:** In these the NNS and NS interlocutors were asked to take turns, one drawing and then describing an original picture, the other replicating the picture, based solely on the drawer's descriptions and comments, and follow-up responses to the replicator's questions. Neither was allowed to look at the other's picture as it was being described. The Information Gap task is designed to give greater control over information to the interlocutor who describes the picture. However, in carrying out the task, the picture describer does not work in isolation, as there is one principal goal to the task -- the picture replication -- toward which both describer and replicator must work. In the present study, each NNS and NS subject participated in Information Gap 1, in which the NNS was asked to draw and describe a picture and in Information Gap 2, in which the NS was asked to draw and describe. This task has has been used extensively as an instrument for data collection in research on both learners' second language production and the input available to them, and has itself been the object of research in studies by Gass and Varonis (1985, 1986) and Pica et al. (1989).

(b) **A Jig-Saw task:** This required the NNS and NS interlocutors to reproduce an unseen sequence of pictures by exchanging their own uniquely held portions of the sequence. As in the Information gap tasks, both interactants were asked to work convergently toward the same outcome, but the relative quantity of information required in meeting the goal of this task was distributed evenly between them, rather than held by one of them alone. The Jig-Saw task has been used in prior research on ESL learners and NS interlocutors (See, e.g., Doughty and Pica 1986, Pica 1987). In the present study, a picture sequence of cars was used for Round One of data collection and a sequence of houses was used for Round Two. Both of these tasks were pre-tested on NS-NS dyads. A version of the houses task can be found in Appendix II.

(c) **An Opinion Exchange task:** In this the NNSs and NSs were told to share their views on the language learning contributions of the preceding tasks. This task, with its more open-ended, divergent goals, gives both interlocutors potentially equal control over information, but, based on previous research (Holliday 1987, 1988 and Pica 1987), appears subject to domination by the more $L_2$ proficient, NS interactant.

As shown in surveys by Pica, Falodun, Farrah, Kanagy, Unger, and Zhang, (1989) and Pica, Kanagy, and Falodun, (1989), each of the task types of the present research can be linked to specific learning materials currently used in second and foreign language classrooms. It was believed, therefore, that even though the present research was to be carried out in a controlled setting, the tasks would have considerable face validity for participants in the study, and further,

that findings about their use by these subjects would be relevant to classroom concerns and instructional decisions.

Data Coding

An interactionist perspective was taken in coding the data collected for the study, in order to be able to describe, analyze, and quantify the negotiations made by NNSs and NSs in attempting to understand and be understood by each other during their collaboration. A framework was developed which attempted to capture the negotiated nature of speech adjustments, to show, for example, how they can be triggered by and reflected in the form, structure, and content of what NSs and NNSs say to each other. Earlier versions of this framework have been used, (with inter-coder agreement ranging from .92 to .97) in a series of studies (including published versions in Pica ,1987; Pica et al., 1989). Its most up-to-date version (inter-coder agreements range from .88 to .100) is shown in Appendix I.

As shown in Appendix I, in the course of negotiation, both the NNS and NS can signal a need for clarification, confirmation, or reiteration of the other's utterance, which serves as a trigger for the negotiation sequence. As shown in categories 2a-c, these signalling utterances are directed toward the structure, form, and/or meaning of the trigger, and can be questions, statements, phrases, or words which do not in themselves incorporate the trigger (as in 2a) or they can be repetitions of the trigger (as in 2b). The signals shown in 2c modify the trigger semantically, morphologically, or syntactically, these latter signals made by segmenting one or more constituents of the trigger, then producing them in isolation or incorporating them into a longer utterance.

When produced by the NS, the signalling utterances of category 2 are believed to function as what Schachter (1983) calls "negative input," in that they provide learners with metalinguistic information about their interlanguage and the $L_2$ variety of their interlocutor. They are believed to provide opportunities for NNSs to test interlanguage hypotheses and segment and restructure interlanguage grammar and, according to Swain (1985), provide a context for responses of "comprehensible output," in which NNSs can modify their interlanguage output toward greater comprehensibility and accuracy.

When produced by learners, the signalling utterances of category 2 are believed to function as cues to NSs that they need to repeat or modify their $L_2$ output to make it more comprehensible. Through such signals, learners are believed to give themselves another opportunity to hear and come to understand $L_2$ input, as well as an opportunity to focus their attention on $L_2$ forms and features.

NNS and NSs can respond to these signals in a variety of ways as shown in categories 3a - g. For example, they can respond by (3a) switching to a new or related topic, or by (3b) repeating their initial trigger or (3c) their interlocutor's signal. They can also modify (3d) the trigger or (3e)

their interocutor's signal, and do so semantically, morphologically, or syntactically. The modifications in (3d) and (3e), when made by NNSs, provide them with opportunities to exploit and adjust their interlanguage resources. When NSs produce these modifications, they reveal to NNSs $L_2$ semantic relationships of synonymy and paraphrase as well as patterns of morpheme affixation, phrase structure, and constitutent movement.

Other category 3 responses (i.e., 3f and 3g) which simply confirm the signal or indicate an inability to respond to it, are believed to maintain or alter the flow of interaction. However, they do not, in themselves, provide opportunities for NNSs to hear modified $L_2$ or to modify their interlanguage.

To complete the negotiation, the NS or NNS can supply either (4a) an explicit signal of comprehension or (4b) a topic continuation move. Whether, indeed, these latter are true indications of comprehension is an empirical question, one which was not a concern of the present research. Our focus in coding was on the signals and responses of learners and their interlocutors as contexts for learners to request and receive modified $L_2$ input, to gain feedback on their own production, and to modify their interlanguage output.

Predictions

In light of the limited amount of empirical work on the role of gender in language learning, the present study sought to describe gender-related influences on learner-interlocutor interaction as much as it aimed to test predictions about these processes. Thus a limited number of predictions was made about the linguistic output and interactional behavior of the NS-NNS interlocutors as they worked in dyads of same and opposite genders on the communication tasks. Based on results of very scant, and only partially relevant, previous research on learner gender as a factor in social interaction (e.g., Gass and Varonis, 1986; Pica et al., 1989), the following predictions were made regarding the effects that learners' gender and gender pairing would have on NS-NNS negotiated interaction, and in turn, on opportunities for NNSs to request and receive modified $L_2$ input and to modify their own production in response to requests:

**Hypothesis 1:** Greater amounts of negotiated interaction, i.e., signal-response exchanges, would occur in cross-gender dyads of male NSs - female NNSs and female NSs - male NNSs than in same-gender dyads of male NSs to male NNSs and female NSs to female NNSs. This prediction has been supported for NNS-NNS interaction in Gass and Varonis (1986), but has not been tested for NS-NNS interaction.

**Hypothesis 2:** female NNSs would produce more signals than male NNSs. The prediction of this hypothesis was also supported in the Gass and Varonis (1986) study on NNS-NNS interaction, but again, has not been tested for NS-NNS interaction.

**Hypothesis 3:** Male NNSs would be given more NS signals than female NNSs. This hypothesis was supported by findings of Pica et al. (1989); however, only female NSs were included in that study. No study has yet examined both female and male NSs as signal providers to male and female NNSs.

**Hypothesis 4:** Male NNSs would produce more modification of their speech in response to NS signals than would female NNSs. This hypothesis was also based on Pica et al. (1989). Again, however, only female NSs were examined as a source of signals to and receiver of responses from male and female NNSs.

These four hypotheses, when viewed in terms of possible language learning opportunities and experiences, suggested that (1) cross-gender pairings, compared to same-gender pairings, would provide greater opportunities for NNSs to hear modifed $L_2$ input and to modify their own production; (2) female NNS subjects, as more frequent signal producers than males, would be given more opportunities to hear modified $L_2$ input; (3) male NNS subjects, as more frequent signal receivers than females, would receive and act upon more opportunities to modify their interlanguage output.

Four additional predictions were made, again with considerable caution, in light of the small body of gender-related language learning research. Also contributing to these predictions were findings from studies by Markham and O'Barr et al., as noted above, which have shown that among English NSs, speaker expertise and information control can often play a more critical role than speaker gender with regard to features of speech production. Thus, it was predicted that the distribution and control of information on the communication tasks used to gather the data for the study would interact with the gender and gender pairing of subjects in a number of ways. These possibilities were addressed through the following hypotheses:

**Hypothesis 5:** Hypotheses 2-4 would be supported in all tasks except the Jig-Saw task. It was believed that the gender-related effects predicted in Hypotheses 2-4 would not be seen on the Jig-Saw task because the equal control given to both NNSs and NSs over the information needed to carry out this task would outweigh any effects for gender differences. The other tasks, with their initial and/or potential imbalances of information control between NS and NNS would provide evidence for the sensitivity to gender predicted in Hypotheses 2 - 4.

**Hypothesis 6:** The results predicted in Hypothesis 2 would be most evident in Information Gap 2 and the Opinion Exchange tasks. This was because the NSs were told to begin the Information Gap 2 task by holding all information about the picture to be drawn. The NNSs needed access to this information in order to carry out the task. Thus, the female NNSs, as predictably more frequent signallers, would take greater advantage of opportunities to signal for information they could not understand.

As for the Opinion Exchange task, it was believed that this would provide *potentially* equal opportunities for male and female NNSs to signal their NS interlocutors. However, in light of the open-ended nature of this task type, and the possibility for NS domination, it was believed that the female NNSs would take greater advantage of signalling opportunities brought about as NSs raised most of the points to be discussed.

**Hypothesis 7:** The results predicted in Hypothesis 3 would be most evident in Information Gap 1 and Opinion Exchange tasks.

**Hypothesis 8:** The results predicted in Hypothesis 4 would be most evident in the Information Gap 1 and Opinion Exchange tasks.

Both male and female NNSs would begin the Information Gap 1 task by holding all information about the picture to be drawn, but as male NNSs were predicted to be greater receivers of NS signals and responders to those signals, it was believed that such a predicted effect would be more apparent on this task. It was also believed that, along with the Information Gap task, the Opinion Exchange task would provide the strongest context to support Hypotheses 3-4. Based on the results of Pica et al. (1989) with female NSs, it was believed that, compared to female NNSs, the male NNSs would take greater advantage of the open-ended nature of this task to respond frequently to signals from both male and female NSs and to do so with modified interlanguage output.

Hypothesis Testing and Data Analysis:

All transcripts of interactional data were coded based on the categories of the Framework displayed in Appendix I.

Hypothesis 1 was tested by counting and comparing the number of signal and response utterances (i.e., utterance types 2 and 3 in the framework shown in Appendix I.) per total number of utterances across the four dyad categories and the combined cross vs. same-gender dyads.

Hypotheses 2 and 3 were tested by counting and comparing the number of signal utterances (type 2) per total number of utterances produced by (for Hypothesis 2) and received by (for Hypothesis 3) male vs. female NNSs across the four dyad categories.

Hypothesis 4 was tested by counting and comparing the proportion of modified responses (Utterance types 3-d and 3-e) per total number of response utterances produced by male and female NNSs across the four dyad categories.

Hypotheses 5-7 were tested by further dividing the data which had been used for testing Hypotheses 1-4 into the tasks from which these data had been collected.

Results and Discussion

Analysis of data and $X^2$ testing of results found little direct support for the hypotheses of the study. Thus, no support was found for Hypothesis 1, which had predicted that more negotiated interaction would occur in cross-gender pairs of male NS-female NNS and female NS-male NNS than in same-gender pairs of male NS-male NNS and female NS-female NNS. Nor was support found for Hypotheses 2, 3, and 4 which had predicted distinctions between male and female NNSs such that female NNSs would produce more signals, male NNSs would be given more NS signals, and male NNSs would produce more modification of their speech in response to NS signals. The lack of evidence to support these hypotheses, in turn, brought about rejection of Hypothesis 5, which had predicted that results of testing Hypotheses 2-4 would hold on all tasks except Jig-Saw.

Hypothesis 6, which had predicted that females NNSs would produce more signals than male NNSs on Information Gap 2 and Opinion Exchange tasks, was also rejected as was Hypothesis 8, which had predicted that male NNSs would produce greater proportions of modified to unmodified responses on the Information Gap 1 and Opinion Exchange tasks. The remaining hypothesis of the study was not rejected completely, but was given only partial support. Thus Hypotheses 7, which had predicted that male NNSs would be given more NS signals on Information Gap 1 and Opinion Exchange tasks, was shown to be significant only for the Opinion Exchange task.

Even though the results did not support predictions regarding the effects of NNS gender, NS-NNS gender pairing, and communication task on features of negotiation, follow-up analyses of these results did reveal several consistent patterns for both gender and task variables: negotiation and negotiation utterances appeared to be affected by gender, but it was the gender of the NS rather than the NNS member of the dyads which seemed particularly crucial. The types of tasks in which the NS - NNS dyads engaged also played a role in negotiation, as there were differences in the frequency of negotiation signals and modified responses produced during the different task types. These follow-up analyses are addressed in more detail in the discussion of results below.

**Hypothesis 1:** No support was found for Hypothesis 1, which had predicted that more negotiated interaction, i.e., greater proportions of signal and response utterances to total utterances, would occur in cross- than same-gender NS-NNS dyads. Instead, the opposite was indicated. As shown in Table 1, the proportions of signal and response utterances were actually larger among the same-gender dyads compared to cross-gender dyads, i.e., 20% vs. 18% for the sum of the four tasks in which they engaged. Although this was not a significant difference, ($X^2 = 3.76$, d.f. = 1, n.s.), it was only .08 below the figure of 3. 84 required for significance at the .05 level. As

such, it indicated a trend for significance in the opposite direction of what Hypothesis 1 had predicted.

Closer examination of the data revealed that this trend in favor of the same-gender dyads was due to the relative lack of negotiation in cross-gender dyads composed of male NSs - female NNSs. As shown in Table 1, the proportions of signal and response utterances to total utterances for the sum of the four tasks were a similar 19% for male NS - male NNS, 20% for female NS - female NNS, and 21% for female NS - male NNS, but only 16% for male NS-female NNS. Statistical analysis showed significant differences between same-gender dyads of female NS - female NNS vs. cross-gender dyads of male NS- female NNSs ($X^2$ = 20.22, d.f. =, $p < .05$). However, there were no statistically significant differences for same-gender dyads of male NS - male NNS vs. cross-gender dyads of female NS - male NNS ($X^2$ = 3.21, d.f. =, n.s.).

In summary, contrary to the prediction of Hypothesis 1, negotiation was not greater among dyads of cross vs. same-gender. Rather, results showed that negotiation was significantly greater among same gender dyads for female NNSs and about equal in both same and cross-gender dyads for male NNSs (see table 1).

**Table 1**
**Negotiated Interaction in Relation to Gender Pairing and Task**

Frequency and Percentage of NS-NNS Signal + Response (S+R) and Other (OTH) Utterances. Total Utterances on Information Gap 1 (INFO GAP1), Information Gap 2 (INFO GAP 2), Jig-Saw (JIG-SAW), Opinion Exchange (OPINION EXCH.), and sum of the four tasks (SUM OF TASKS) by Male (M) and Female (F) Native and Non-Native Speakers (NSs and NNSs).

| | | INFO GAP 1 | | | INFO GAP 2 | | | JIG-SAW | | | OPINION EXCH. | | | SUM OF TASKS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | S+R | OTH | TOT | S+R | OTH | TOT | S+R | OTH | TOT | S+R | OTH | TOT | S+R | OTH | TOT |
| M NS - F NNS | n | 187 | 703 | 890 | 251 | 880 | 1131 | 35 | 685 | 720 | 22 | 379 | 401 | 495 | 2643 | 1427 |
| (CROSS GENDER) | % | 21 | 79 | | 22 | 78 | | 5 | 95 | 5 | 95 | 16 | 84 | | | |
| F NS - M NNS | n | 204 | 702 | 906 | 164 | 478 | 642 | 149 | 756 | 905 | 80 | 304 | 384 | 597 | 2242 | 8370 |
| (CROSS GENDER) | % | 23 | 77 | | 26 | 74 | | 16 | 84 | | 21 | 79 | | 21 | 79 | |
| M NS - M NNS | n | 271 | 904 | 1175 | 206 | 743 | 949 | 120 | 684 | 804 | 46 | 378 | 424 | 643 | 2709 | 3352 |
| (SAME GENDER) | % | 23 | 77 | | 22 | 78 | | 15 | 85 | | 11 | 89 | | 19 | 81 | |
| F NS - F NNS | n | 256 | 824 | 1080 | 259 | 592 | 851 | 103 | 869 | 972 | 27 | 276 | 303 | 645 | 2561 | 3206 |
| (SAME GENDER) | % | 24 | 76 | | 30 | 70 | | 11 | 89 | | 9 | 91 | | 20 | 80 | |
| SAME GENDER | n | 527 | 1728 | 2255 | 465 | 1335 | 1800 | 223 | 1553 | 1776 | 73 | 654 | 727 | 1288 | 5270 | 6558 |
| (COMBINED) | % | 23 | 77 | | 26 | 74 | | 13 | 87 | | 10 | 90 | | 20 | 80 | |
| CROSS GENDER | n | 391 | 1405 | 1796 | 415 | 1358 | 1773 | 184 | 1441 | 1625 | 102 | 683 | 785 | 1092 | 4887 | 5979 |
| (COMBINED) | % | 22 | 78 | | 23 | 77 | | 11 | 89 | | 13 | 87 | | 18 | 82 | |

Additional analyses revealed that the types of tasks in which the dyads engaged was a discriminating factor in the quantity of their negotiation relative to their total interaction. This finding was consistent for both cross and same-gender dyads. Thus, for cross-gender dyads, signal and response utterances were 22% and 23% of the total number of utterances on the Info. Gap 1 and 2 tasks respectively, but only 11% on Jig-Saw and 13% on Opinion Exchange.

Similarly, in same-gender pairs, signal and response utterances were 23% and 26% of the total utterances on Info. Gap 1 and 2 respectively, but only 13% on Jig-Saw and 10% on Opinion Exchange. These patterns suggested that negotiation was greater when, at the beginning of a task, opportunities for information control were given solely to one member of the NS-NNS dyad. Negotiation was not as frequent when initial information was shared between both members of the dyad, whether explicitly, as in a Jig-Saw task, or implicitly for the Opinion Exchange task.

**Hypothesis 2:** No support was found for Hypothesis 2, which had predicted that female NNSs would produce more signals than male NNSs. As shown in Table 2, both female and male NNS signal utterances were 11% of their total number of utterances on the sum of the four tasks, with frequency data revealing no significant differences between them ($X^2 = .035$, d.f. = 1, n.s.).

**Table 2**
Frequency and Percentage of NNS Signal (S) and Other (OTH) Utterances/Total (TOT) NNS Utterances

| | | INFO GAP 1 | | | INFO GAP 2 | | | JIG-SAW | | | OPINION EXCH. | | | SUM OF TASKS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | S | OTH | TOT | S | OTH | TOT | S | OTH | TOT | S | OTH | TOT | S | OTH | TOT |
| F NNS to M NS | n | 14 | 428 | 442 | 113 | 336 | 479 | 11 | 330 | 341 | 5 | 161 | 166 | 143 | 1285 | 1248 |
| | % | 3 | 97 | | 24 | 76 | | 3 | 97 | | 3 | 97 | | 10 | 90 | |
| F NNS to F NS | n | 31 | 436 | 467 | 109 | 253 | 362 | 16 | 384 | 400 | 1 | 112 | 113 | 157 | 1185 | 1342 |
| | % | 7 | 93 | | 30 | 70 | | 4 | 96 | | 1 | 99 | | 12 | 88 | |
| Total F NNS to M NS + F NS | n | 45 | 864 | 909 | 222 | 619 | 841 | 27 | 714 | 741 | 6 | 273 | 279 | 300 | 2470 | 2770 |
| | % | 5 | 95 | | 26 | 74 | | 4 | 96 | | 2 | 98 | | 11 | 89 | |
| M NNS to M NS | n | 23 | 530 | 553 | 87 | 209 | 2965 | 34 | 288 | 322 | 9 | 137 | 146 | 153 | 1164 | 1317 |
| | % | 4 | 96 | | 29 | 71 | | 11 | 89 | | 6 | 94 | | 12 | 88 | |
| M NNS to F NS | n | 22 | 423 | 445 | 63 | 198 | 261 | 38 | 375 | 413 | 3 | 175 | 178 | 126 | 1171 | 1297 |
| | % | 5 | 95 | | 24 | 76 | | 9 | 91 | | 2 | 98 | | 10 | 90 | |
| Total M NNS to M NS + F NS | n | 45 | 953 | 998 | 150 | 407 | 557 | 72 | 663 | 735 | 12 | 312 | 324 | 279 | 2335 | 2614 |
| | % | 5 | 95 | | 27 | 73 | | 10 | 90 | | 4 | 96 | | 11 | 89 | |

Closer analysis of the signal data revealed that, in some instances, frequency of signals among female NNSs was conditioned by the gender of their NS interlocutor and the task types in which they engaged. Thus female NNSs tended to signal more frequently when they interacted with female NSs than with male NSs. This was especially apparent on Information Gap tasks, reflecting another facilitating effect for this task on negotiation as had been revealed in testing of Hypothesis 1. On the Information Gap 1 task, female NNS signals constituted 7% of their total utterances when interacting with female NSs, but only 3% of their total utterances when interacting with male NSs. This difference was significant. ($X^2 = 5.81$, d.f. = 1, $p < .05$). Significant differences were found on the Information Gap 2 task, as female NNS signals were 30% of their total utterances when interacting with female NSs and 24% of their total utterances when interacting with male NSs. ($X^2 = 4.51$, d.f. = 1, $p < .05$). As can be seen in these results, when female NNSs participated in tasks on which either they or their interlocutor held initial control over

information, they were more likely to signal for help with $L_2$ input from their female than male NS interlocutors.

On the other tasks of the study, in which both NSs and NNSs had initial control over task-related information, female NNSs were found not to make significant distinctions in their signals to male and female NSs. On the Jig-Saw task, female NNS signals were 4% of their total utterances to female NSs and 3% to male NSs ($X^2 = 0.314$, df = 1, n.s.). On the Opinion Exchange task, in which female NNSs signals were 1% of their total utterances to female NSs and 3% to male NSs, there were too few tokens to be tested for statistically significant differences.

Unlike female NNSs, the frequency of male NNS signals was not conditioned by the gender of their NS interlocutor. Thus, male NNSs did not display significant differences in their signals to female and male NSs. On the Information Gap 1 task, male NNS signals were 5% of the total utterances to female NSs and 4% to male NSs ($X^2 = 0.353$, d.f. = 1, n.s.). On the Information Gap 2 task, proportions of signal to total utterances were 24% to female NSs vs. 29% to male NSs ($X^2 = 1.95$, d.f. = 1, n.s.). On the Jig-Saw task, these proportions were 9% vs. 11% ($X^2 = 0.378$, d.f. = 1, n.s.). Greater differences were found on the Opinion Exchange task, i.e., male NNSs signals were 2% of their total utterances to female NSs and 6% to male NSs, but, again, as in female NNS interaction on this task, there were too few signal tokens to be tested statistically. Overall, results showed that the frequency of male NNS signals to male vs. female NSs was not affected by their initial control over task-related information.

**Table 3**
Frequency and Percentage of NS Signal (S) and Other (OTH) Utterances/Total NS Utterances

| | | INFO GAP 1 | | | INFO GAP 2 | | | JIG-SAW | | | OPINION EXCH. | | | SUM OF TASKS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | S | OTH | TOT | S | OTH | TOT | S | OTH | TOT | S | OTH | TOT | S | OTH | TOT |
| F NS to M NNS | n | 77 | 384 | 461 | 8 | 373 | 381 | 33 | 459 | 492 | 31 | 175 | 206 | 149 | 1391 | 1540 |
| | % | 17 | 83 | | 2 | 98 | | 7 | 93 | | 15 | 85 | | 10 | 90 | |
| M NS to M NNS | n | 108 | 514 | 622 | 5 | 648 | 653 | 21 | 461 | 482 | 13 | 265 | 278 | 147 | 1888 | 2035 |
| | % | 17 | 83 | | 1 | 99 | | 4 | 96 | | 5 | 95 | | 7 | 93 | |
| Total F + M NS | n | 185 | 898 | 1083 | 13 | 1021 | 1034 | 54 | 920 | 974 | 44 | 440 | 484 | 296 | 3279 | 3575 |
| to M NNS | % | 17 | 83 | | 3 | 97 | | 6 | 94 | | 9 | 91 | | 8 | 92 | |
| F NS to F NNS | n | 96 | 517 | 613 | 17 | 472 | 489 | 33 | 539 | 572 | 12 | 178 | 190 | 158 | 1706 | 1846 |
| | % | 16 | 84 | | 3 | 97 | | 6 | 94 | | 6 | 94 | | 8 | 92 | |
| M NS to F NNS | n | 79 | 97 | 369 | 448 | 3 | 649 | 652 | 6 | 373 | 379 | 6 | 235 | 94 | 2620 | 1714 |
| | % | 18 | 82 | | 0 | 100 | | 2 | 98 | | 3 | 97 | | 5 | 95 | |
| Total F + M NS | n | 175 | 886 | 1061 | 20 | 1121 | 1141 | 39 | 912 | 951 | 18 | 407 | 425 | 232 | 3326 | 3578 |
| to F NNS | % | 16 | 84 | | 2 | 98 | | 4 | 96 | | 4 | 96 | | 6 | 93 | |

**Hypothesis 3:** Hypothesis 3 that male NNSs would be given more NS signals than female NNSs was supported only on the Opinion Exchange task. As shown in Table 3, the proportion of NS signal utterances to total utterances directed to male NNSs on the Opinion Exchange Task was 9%, whereas this figure was 4% for female NNSs. This difference was statistically significant

($X^2 = 8.39$ , d.f. = 1, $p < .05$). Few differences were found among NS signals to male vs. female NNSs across the other three tasks. Thus, on the Information Gap 1 Task, NS signals were 17 % of their utterances to male NNSs and 16% of their total utterances to female NNSs. On the Information Gap 2 Task, these figures were 3% to male vs. 2% to female NNSs, and on the Jig-Saw Task, they were 6% to male vs. 4% to female NNSs.

Hypothesis 3 had predicted that the frequency of NS signals to NNSs would differ according to NNS gender, i.e., whether the NNSs had been male or female. Results showed that NNS gender did affect the frequency of NS signals to NNSs on the Opinion Exchange task, but, for the other task types, it was the gender of the NS signal producer which had a more differentiating effect than the gender of the NNS signal receiver. Proportionately more of the total number of NS utterances given as signals came from female (9%) than from male NSs (6%), ($X^2 = 16.92$, df = 1, $p < .05$). Differences between signals given to NNSs by male and female NSs were significant for:

(a) Male and female NNSs on the sum of the four tasks: thus, as displayed in Table 3, signals to male NNSs constituted 10% of the total utterances produced by female NSs vs. 7% of the total male NS utterances. ($X^2 = 6.62$, d.f. = 1, $p < .05$). Similarly, signals to female NNSs were 8% of the total female NS utterances vs. 5% of male NS utterances ($X^2 = 12.77$, d.f. = 1, $p < .05$).

(b) Male NNSs on the Opinion Exchange Task: also shown in Table 3, female NS signals were 15% of their total utterances to male NNSs, but male NS signals only 5% of their total utterances to male NNSs. ($X^2 = 15.40$, d.f. = 1, $p < .05$).

(c) Female NNSs on Jig-Saw Task: again, as indicated in Table 3, female NS signals were 6% of their total utterances to female NNSs, while male NS signals were only 2% of their total utterances to female NNSs. ($X^2 = 6.63$, d.f. = 1, $p < .05$).

**Hypothesis 4:** No support was found for Hypothesis 4 that male NNSs would produce more modification of their speech in response to NS signals than would female NNSs. As shown in Table 4, proportions of modified responses to total response utterances by male vs. female NNSs were about the same for the sum of the four tasks (46% by males and 48% by females, $X^2 = 0.21$, d.f. = 1, n.s.).

Overall, results for testing Hypothesis 4 were of little statistical significance. Thus, as shown in Table 4, on Opinion Exchange, male NNSs produced greater proportions of modified responses than female NNSs. However, this difference was not statistically significant ( $X^2 = 2.69$, df = 1, n.s.). On Jig-Saw, male NNSs actually produced smaller proportions of modified responses than female NNSs, but again, this result was not significant ($X^2 = 1.34$ , d.f. = 1, n.s.).

Table 4
Frequency and Percentage of NNS Modified Response (MD)
and Other (OTH) Response Utterances/Total (TOT) NNS Response Utterances

| | | INFO GAP 1 | | | INOF GAP 2 | | | JIG-SAW | | | OPINION EXCH. | | | SUM OF TASKS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MD | OTH | TOT | MD | OTH | TOT | MD | OTH | TOT | MD | OTH | TOT | MD | OTH | TOT |
| F NNS to M NS | n | 36 | 42 | 78 | 2 | 1 | 3 | 2 | 4 | 6 | 1 | 5 | 6 | 41 | 52 | 93 |
| | % | 46 | 54 | | 67 | 33 | | 33 | 67 | | 17 | 83 | | 44 | 56 | |
| F NNS to F NS | n | 42 | 46 | 88 | 11 | 6 | 17 | 17 | 17 | 34 | 7 | 6 | 13 | 77 | 75 | 152 |
| | % | 48 | 52 | | 65 | 35 | | 50 | 50 | | 54 | 46 | | 51 | 49 | |
| Total F NNS | n | 78 | 88 | 166 | 13 | 7 | 20 | 19 | 21 | 40 | 8 | 11 | 19 | 118 | 127 | 245 |
| to M + F NS | % | 47 | 53 | | 65 | 35 | | 48 | 53 | | 42 | 58 | | 48 | 52 | |
| M NNS tro M NS | n | 41 | 69 | 110 | 4 | 2 | 6 | 10 | 14 | 24 | 8 | 4 | 12 | 63 | 89 | 152 |
| | % | 37 | 63 | | 67 | 33 | | 42 | 58 | | 67 | 33 | | 41 | 59 | |
| M NNS to F NS | n | 40 | 40 | 80 | 6 | 3 | 9 | 10 | 22 | 32 | 27 | 16 | 43 | 83 | 81 | 164 |
| | % | 50 | 50 | | 67 | 33 | | 31 | 69 | | 63 | 37 | | 51 | 49 | |
| Total M NNS | n | 81 | 109 | 190 | 10 | 5 | 15 | 20 | 36 | 56 | 35 | 20 | 55 | 146 | 170 | 316 |
| to M + F NS | % | 43 | 57 | | 67 | 33 | | 36 | 64 | | 64 | 36 | | 46 | 54 | |

Additional observations, as indicated through Table 4, revealed that under several conditions, it was again NS gender that played a more critical role than NNS gender in NNS modification of their responses. Thus, for both male and female NNSs on the sum of the four tasks, there was greater modification of responses during their interaction with female NSs than with male NSs, although these differences were not significant. Male NNSs modified 51% of their responses to female NSs vs. 41% to male NSs ($X^2 = 2.30$, d.f. = 1, n.s.). Female NNSs modified 51% of their responses to female NSs vs. 44% to male NSs. ($X^2 = 0.75$, d.f. = 1, n.s.).

This pattern was also apparent on a number of specific tasks. Thus on Information Gap 1, male NNSs modified 50% of their responses to female NSs vs. 37% of their responses to male NSs. Again, however, the difference was not significant ($X^2 = 2.57$, d.f. = 1, n.s. ). On Jig-Saw, female NNSs modified 50% of their responses to female NSs vs. 33% to males, and on Opinion Exchange, female NNSs modified 54% of their responses to female NSs vs. 17% of their responses to males. Unfortunately, the frequency of modified responses on these tasks was too small for purposes of statistical testing.

**Hypothesis 5:** No support was found for Hypothesis 5 which had stated that Hypotheses 2-4 would be supported on all tasks except Jig-Saw. The most obvious reason for this result was, of course, that so little support had been found in testing Hypotheses 2-4 on the three other tasks. However closer analysis of its impact on NS-NNS negotiation revealed a complex pattern of distinctions and similarities for Jig-Saw in relation to the other tasks.

The greatest distinction between Jig-Saw and the other tasks was found in testing Hypothesis 2. As shown in Table 2, male NNSs produced significantly greater proportions of signals than female NNSs on this task, but it was the only task on which they did so. (10% for male NNSs vs. 4% by female NNSs, $X^2 = 22.32$, df = 1, $p < .05$). On the other three tasks, the difference in proportions of signal to other utterances was either much smaller or barely evident.

Another distinction between Jig-Saw and the other tasks was shown by the results of testing of Hypothesis 4. Contrary to the prediction made in Hypothesis 4, male NNSs were found not to differ significantly from female NNSs in their production of modified responses on the sum of the four tasks. There was, however, a tendency toward a smaller proportion of modified responses by male NNSs on Jig-Saw compared with the other tasks. As shown in Table 4, 36% of male NNS responses were modified on Jig-Saw, whereas male NNS modified responses were 43% on Information Gap 1, 67% on Information Gap 2, and 64% on Opinion Exchange.

One of the strongest similarities between Jig-Saw and the other tasks was found in testing results of Hypothesis 3. Here, proportions of signal utterances produced by male and female NSs were about equal within tasks. As shown in Table 3, NS signals on Jig-Saw were 6% of their total utterances to male NNSs and 4% of their total to female NNSs. NS signals on Information Gap 1 were 17% of their utterances to male NNSs and 16% of their utterances to females. On Information Gap 2, NS signals were 3% of their utterances to male and 2% to female NNSs.

**Hypothesis 6:** Partial support was found for Hypothesis 6, which had stated that compared to male NNSs, female NNSs would produce greater proportions of signal utterances on Information Gap 2 and Opinion Exchange tasks. This prediction for female NNSs was supported only for the Information Gap 2 Task during interaction with female NSs. As shown in Table 2, female NNS signals were 30% of their total utterances to female NSs whereas male NNS signals to female NSs were only 24% of their utterances ($X^2 = 4.51$, d.f. = 1, $p < .05$). On the Opinion Exchange task, male NNSs actually produced more signals than female NNSs, although, as shown in Table 2, very few signals were produced by NNSs of either gender on this task.

One consistent pattern for both male and female NNS signal production on the Information Gap 2 task was that far greater proportions of NNS utterances were produced as signals on this task compared to the other tasks of the study. As shown in Table 2, of the total number of utterances produced by male and female NNSs, 27% and 26% respectively, were signals, whereas male and female NNS signals were each 5% of their total utterances on Information Gap 1, 10% and 4% of their respective utterances on Jig-Saw, and 4% and 2% respectively on Opinion Exchange. This was consistent with other findings of the study in which negotiation features were found to be more frequent when, in order to complete a task, NNSs needed to obtain information controlled initially by their NS interlocutors.

**Hypothesis 7:** Partial support for Hypothesis 7, i.e., that male NNSs would be given significantly more NS signals than females on Information Gap 1 and Opinion Exchange than on the two other tasks, was found only for the Opinion Exchange task. As noted in the discussion of Hypothesis 3 and shown in Table 3, male NNSs were given 9% of the total NS utterances as signals on Opinion Exchange, but female NNSs were given only 4%. This difference was statistically significant ($X^2 = 8.39$ , d.f. = 1, $p < .05$). Both male and female NNSs received

greater proportions of NS utterances as signals on Information Gap 1 than on the other tasks, but there was little difference between them, i.e., male NNSs were given 17% of the total NS utterances as signals compared with 16% for female NNSs. On the Information Gap 2 and Jig-Saw Tasks, the respective figures were quite small, i.e., 3% to males vs. 2% to females and 6% to males vs. 4% to females.

**Hypothesis 8:** Hypothesis 8, which had predicted that modified responses by NNS males would be most evident on Information Gap 1 and Opinion Exchange tasks, was not supported. As shown in Table 4, proportions of modified to unmodified responses on this task were 64% for male NNSs vs. 42% for female NNSs, but this difference was not significant ($X^2 = 2.69$, df = 1, n.s.). The results predicted by Hypothesis 8 were actually least evident on Information Gap 1, as more modified responses were produced by female than male NNSs on this task (47% for female NNSs vs. 43% for male NNSs).

Summary of Results

Results of follow-up data analyses revealed few differences in relative quantity of negotiation among same-gender dyads of female NSs - female NNSs and male NS - male NNSs and cross-gender dyads of female NS - male NNSs. There was less negotiation in cross-gender dyads of male NSs - female NNSs than in these other NS - NNS dyads. In addition, greater amounts of negotiation were found for both cross and same-gender dyads on Information Gap Tasks 1 and 2 than on Jig-Saw or Opinion Exchange Tasks.

In terms of negotiation signals *produced by* NNSs, there were no significant differences between male and female NNSs overall, but differences between them were revealed when their signals were compared on the basis of NS interlocutor gender. Thus female NNSs gave more signals to female NSs than male NSs. This was especially apparent on the two Information Gap tasks. male NNSs did not differentiate their signals according to NS interlocutor gender.

With regard to negotiation signals *given to* NNSs, it was found that both male and female NNSs were given more signals from female NSs than by male NSs. For male NNSs, this pattern was most pronounced on the Opinion-Exchange Task; for female NNSs, the pattern was most apparent on the Jig-Saw Task.

In terms of modification of their responses by NNSs, the most noteworthy differences between male and female NNSs were revealed only on the Opinion Exchange task, but these were not statistically significant. Differences were also found when NNS modified responses were compared on the basis of NS interlocutor gender. As such, greater NNS Modification of responses was found during interaction with female NSs than with male NSs, especially for male NNSs on the Information Gap 1 Task and for female NNSs on Jig-Saw and Opinion Exchange,

but the relative frequencies of these responses were either not significant or not sufficient for statistical analysis.

In summary, results did not show a clear-cut role for NNS gender as a discriminating factor in frequency of negotiated interaction and its associated opportunities for comprehension of input, feedback on production, and modification of output. What emerged from the testing of hypotheses and analysis of results was a complex interaction of both gender and task type in providing and inhibiting these opportunities. Overall, however, in most of the results which had implications for facilitating NNS negotiation, comprehension and modified production, female NSs and Information Gap tasks appeared to play a more critical role than the other interlocutor and task variables analyzed in the study.

## Observations, Implications, and Directions for Further Research

As emphasized throughout the review of results, very little support was found for the eight hypotheses regarding the role of learner gender in features of negotiated interaction and its associated opportunities for language learning. This was not a total surprise, however, as the hypotheses had been motivated by a very restricted empirical base of a few related studies. What was somewhat surprising, however, was that the role of gender in providing language learning opportunities was revealed more clearly in terms of the NSs rather than the NNSs who participated in the study. The group of female NS subjects was more consistent than the male NSs in working with *both* male and female NNS subjects in promoting negotiation, inviting requests for clarification of input, and providing signals for NNSs to clarify their output and modify their responses.

These NS contributions may have been due to sociocultural factors which had not been taken into account in the original design of the study since its focus was on NNS linguistic and interactional behaviors and its hypotheses had been motivated by research on these areas. Thus, the female NSs of the study, may have been behaving toward the NNS subjects in ways which have been observed in comparison studies of interactions involving male and female NSs in U.S. society (as reviewed by Wolfson 1989). What that body of research has shown is that, in their interactions with other American English NSs, females work harder to sustain conversation, provide more support, and engage in greater accommodation. Linguistically, therefore, they ask more questions and invite more responses than have been shown by male NSs of American English. Evidence of this pattern of linguistic behavior is revealed in the following excerpts of the female vs. male NSs as they interacted with male and female NNSs. As can be seen, the female NSs were less likely to discontinue a negotiation when NNSs seek clarification:

| Female NS | Female NNS |
|---|---|
| it's an oval oval | |
| which is um like an egg | like an egg? um |
| like an egg um ... | |
| but it's up against the house so its like oval on | |
| one side and the other side is next to the house | |
| to the one side and | |
| ok it's oval on the side like facing the yard | oval? |
| like an egg, the shape of an egg, ok? | |
| and then it's right up against the house, | |
| it's like right next to the house, | |
| like this is the front of the house | |
| and it would be right next to it | ah |

| Male NS | Female NNS |
|---|---|
| does the TV have antennas? | terrace? |
| eas, like two things coming up in the back | |
| antennas? ah ... | eh ... |
| ok, we'll pass | |

| Female NS | Male NNS |
|---|---|
| like part of a triangle? | what is triangle? |
| a triangle is a shape um it has three sides | a peak? |
| three straight sides | a peak? |
| yes it does look like a mountain peak, yes | only line only line? |
| ok two of them, right? one on each side? | |
| a line on each side of the- | yes |
| little lines on each side? | yes |
| like a mountain? | yes |
| all right | |

| Male NS | Male NNS |
|---|---|
| convertible? | what's that? |
| does it have a roof? | no |
| open or closed? | closed |
| I don't have time to be too fancy so | |
| this is it. What else? | |

Drawing also from the work of Wolfson, the different interactional behaviors found among the male NS-female NNS dyads compared to the similar behaviors found among the three other dyad types can be explained against the backdrop of Wolfson's Bulge Theory (Wolfson 1986, 1988). According to Wolfson, greater negotiation tends to occur when interactants who are neither intimates nor total strangers perceive possibilities for friendship. The male NSs and female NNSs may have seen fewer of these possibilities in their coming together for purposes of this study than did the other subject dyads.

Finally, the cultural background of the NNSs may have had an impact on the different interactional behaviors observed. It is possible that the NNSs brought to their interactions with NSs rules for interaction in Japanese society such that the female NNSs were reluctant to signal when they could not understand the male NNSs or to negotiate toward mutual comprehension when they themselves could not be understood. It is also possible that the female NNSs had

experienced fewer previous interactions with male than with female Americans and were thus uncertain as to how to negotiate with the male NSs in this study.

Since this study was carried out on members of, broadly speaking, only two cultural or ethnic groups, it was not possible to separate negotiation patterns which were attributable to one or the other group from those which arose from the interaction of both groups. Not was it possible to know the extent to which gender, culture, and ethnicity were discrete or inter- related variables in the study. This dilemma points to need for further research on interaction between NSs and NNSs across a variety of cultures. It would be important to know, for example, whether the patterns observed among the American F NSs in the study are also found in their interaction with NNSs other than Japanese. Such findings would have implications for interaction in English language classrooms which are typically heterogeneous in the gender, cultural background, and ethnicity of NNS students.

What was also surprising was the limited support found for hypotheses regarding the effects of the jig-saw task on features of negotiation. The Jig-Saw task was not found to be as distinctive from the other tasks as had been predicted. Instead, it was the Information Gap tasks which showed more distinctiveness in that they provided the most clear-cut context for NS-NNS negotiation. One possible reason for this was that the Jig-Saw task had been designed in such a way that made it simply too easy for subjects to carry out. The visual information available to both NSs and NNSs regarding the pictures of houses used in this task may have left less need for them to request clarification or negotiate message meaning than was the case for the Information Gap tasks. In these latter, as picture description and replication tasks, visual information was held initially by only the describing participant, such that the replicating participant had to request this information in order to carry out the task.

Further, the Information Gap and Opinion Exchange tasks gave to the NSs and NNSs greater responsibility for generating the amounts of information conveyed, shared and elaborated upon. The Jig-Saw task, instead, provided participants a set number of items and details to exchange. Although opportunities for participants to embellish these details were available in the Jig-Saw task, the design of the task made the possibility for such embellishment less open to the discretion of its participants.

Differences between the Jig-Saw task and the other two tasks have thus confounded the information control factor under study. Results are therefore tentative regarding the role in negotiation played by this specific task and by information control as represented through the different task structures employed in the study. The present study distinguished information control features on the basis of the structure of information distribution and exchange among task participants. In future studies, care must be taken to control also for amount and type of initial information available to them.

## Conclusion

This study has shed a small amount of light on the question of the roles of learner and interlocutor gender in providing opportunities for language learning through interaction. Further research is needed, however, to provide a substantive answer to this question. Yet before moving on to such research, it may be important to reflect on the more basic question of what role interaction, itself, plays in the language learning process.

Along with other researchers noted throughout this paper, we have suggested that the negotiation toward mutual comprehension which arises during interaction provides NNSs with various kinds of opportunities for second language development, i.e., the opportunities to receive comprehensible input, to gain feedback on production, and to modify interlanguage output, that are particularly focused because of the task structures behind these interactions. However, SLA theory has yet to articulate sufficiently the process whereby learners' understanding of $L_2$ meaning, exposure to feedback on their production, and modification of interlanguage are linked with their internalization of $L_2$ rules and structures and retrieval for subsequent use. Until such an articulation is accomplished, further insights into gender-based differences in interaction involving language learners may serve to identify parameters of their social discourse, but bring little to bear on the nature of $L_2$ learning process. Our study was based on the assumption that languages are learned through interaction; however it is this very assumption which itself must first be tested through what we have come to realize is more urgent research than we ourselves have undertaken.

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2 Other research has been carried out on the "expertness" factor but, unfortunately, not in conjunction with gender variables. Studies by Selinker and Douglas (1985), Woken and Swales (1988), and Zuengler (1989) have shown that $L_2$ "learner expertise" or "learner knowledge" can influence learners' self- and other-perceptions and, in turn, have an impact on their discourse. Areas affected can include politeness features in speech addressed to NNS experts vs. non-experts and amount and type of their control over topic and floor. Differences in linguistic behavior to and by NNSs have been identified even when the same NNS subjects were observed in both expert and non-expert roles, e.g., when speaking on matters related to their professional work vs. matters not as relevant to job-related knowledge.

## APPENDIX I

### Framework for Coding Data on Negotiated Interaction

1. (Trigger) Utterance(s):

| NS | NNS |
|---|---|
| the children are visiting | children they visit |
| their uncle for a few days | uncle few day |

2. Signal directed toward form/meaning of Trigger:

2a. Question/statement/phrase/word which does not incorporate Trigger:

| NS | NNS | NNS | NS |
|---|---|---|---|
| the children are visiting | | children they visit | |
| their uncle for a few days | what? | uncle few day | what? |

2b. Question/statement/phrase/word which repeats Trigger without linguistic (i.e., semantic or morphosyntactic) modification:

| NS | NNS | NNS | NS |
|---|---|---|---|
| the children are visiting | the children are | children they visit | |
| their uncle for a few days | visiting their | the children they visit | |
| | uncle for a vew days? | | |

2c. Question/statement/phrase/word which linguistically modifies all or part of Trigger:

2c1: semantically: through synonym, paraphrase, example, analogy, descriptors, and/or interpretation:

| NS | NNS | NNS | NS |
|---|---|---|---|
| the children are visiting | | children they visit | |
| their uncle for a few days | one week? | uncle few day | they will stay a week? |

2c2: morphologically: through addition, substitution, or deletion of inflectional morpheme(s):

| NS | NNS | NNS | NS |
|---|---|---|---|
| the children are visiting | | children they visit | |
| their uncle for a few days | children they | uncle few day | they visited |
| | visited few day? | | for a few days |

2c3: syntactically: through segmentation, with relocation (subject to object, object to subject) (S > O, O > S), topicalization or incorporation into phrases/clauses):

| NS | NNS | NNS | NS |
|---|---|---|---|
| the children are visiting | | children they visit | |
| their uncle for a few days | uncle he have | uncle few days | their uncle |
| | for few days? | | has the |
| | | | children? |

2c4. syntactically: through segmentation, without relocation (S > O, O > S), topicalization, or incorporation into phrases/clauses:

| NS | NNS | NNS | NS |
|---|---|---|---|
| the children are visiting | | children they visit | |
| their uncle for a few days | few days? | uncle few day | few days |

3. Follow-up Response:

3a. Question/statement/phrase/word which switches to a new topic/supplies information generally related to topic, but not directed toward form/meaning of Signal:

| | | | |
|---|---|---|---|
| the children are visiting<br>their uncle for a few days<br>he lives in Florida | children they visit<br>few days? | uncle few day<br>uncle he live Florida | for a few days |

3b. Statement/phrase/word which repeats Trigger without linguistic (semantic or morphosyntactic) modification:

| NS | NNS | NNS | NS |
|---|---|---|---|
| the children are visiting<br>their uncle for a few days<br>the children are visiting<br>their uncle for a few days | children they visit<br>few days? | uncle few day<br>children they visit<br>uncle few day | for a few days? |

3c. Statement/phrase/word which repeats Signal without linguistic (semantic or morphosyntactic) modification:

| NS | NNS | NNS | NS |
|---|---|---|---|
| the children are visiting<br>their uncle for a few days<br>one week | one week? | children they visit<br>uncle few day<br>a week | a week? |

3d. Statement/phrase/word which linguistically modifies all or part of Trigger:

3d1. semantically: through synonym, paraphrase, example, analogy, descriptors and/or interpretation:

| NS | NNS | NNS | NS |
|---|---|---|---|
| the children are visiting<br>their uncle for a few days<br>the children are staying<br>with my brother for a few days | what? | children they visit<br>uncle few day<br>children they stay<br>my brother few day | what? |

3d2. morphologically: through addition, substitution, or deletion of inflectional morpheme(s):

| NS | NNS | NNS | NS |
|---|---|---|---|
| the children are visiting<br>their uncle for a few days<br>the children have gone to<br>visit their uncle's home for<br>a day or two | what? | children they visit<br>uncle few day<br>children they<br>visiting uncle few days | what? |

3d3. syntactically: through segmentation, with relocation (S > O, O > S) topicalization, or incorporation into phrases/clauses:

| NS | NNS | NNS | NS |
|---|---|---|---|
| the children are visiting<br>their uncle for a few days<br>their uncle has the<br>children for a few days | what? | children they visit<br>uncle few day<br>uncle he have<br>children few days | what? |

3d4. syntactically: through segmentation, without relocation (S > O, O > S), topicalization, or incorporation into phrases/clauses:

| NS | NNS | NNS | NS |
|---|---|---|---|
| the children are visiting<br>their uncle for a few days<br>for a few days | what? | children they visit<br>uncle few day<br>few days | what? |

3e. Statement/phrase/word which linguistically modifies Signal

3e1. semantically: through synonym, paraphrase, example, analogy, descriptors and/or interpretation:

| NS | NNS | NNS | NS |
|---|---|---|---|
| the children are visiting<br>their uncle for a few days<br>almost one week | one week? | children they visit<br>uncle few day<br>almost a week | they will stay a week? |

3e2. morphologically: through addition, substitution, or deletion of inflectional morpheme(s):

| NS | NNS | NNS | NS |
|---|---|---|---|
| the children are visiting | | children they visit | |
| their uncle for a few days | one week? | uncle few day | |
| | they will stay a week? | | |
| no, two weeks | | no, two week | |

3e3. syntactically: through segmentation, with relocation (S > O, O > S),topicalization, or incorporation into phrases/clauses:

| NS | NNS | NNS | NS |
|---|---|---|---|
| the children are visiting | | children they visit | |
| their uncle for a few days | they stay one week? | uncle few day | they will stay a week? |
| their uncle would like them to stay a week | | uncle want them stay a week | |

3e4. syntactically: through segmentation, without relocation (S > O, O > S),topicalization, or incorporation into phrases/clauses:

| NS | NNS | NNS | NS |
|---|---|---|---|
| the children are visiting | | children they visit | |
| their uncle for a few days | they stay one week? | uncle few day | they will stay a week? |
| one week | | a week | |

3f. Confirmation or acknowledgement without linguistic modification:

| NS | NNS | NNS | NS |
|---|---|---|---|
| the children are visiting | | children they visit | |
| their uncle for a few days | one week? | uncle few day | they will stay a week? |
| yes | | yes | |

3g. Indication of difficulty or inability to respond:

| NS | NNS | NNS | NS |
|---|---|---|---|
| the children are visiting | | children they visit | |
| their uncle for a few days | what? | uncle few day | what? |
| I'm sorry, I don't know how to say it better | | is difficult to say | |

4. Comprehension Signal/Continuation Move

4a. Comprehension Signal:

| NS | NNS | NNS | NS |
|---|---|---|---|
| the children are visiting | | children they visit | |
| their uncle for a few days | one week? | uncle few day | they will stay a week? |
| almost two weeks | I see | almost two weeks | |
| | | I see | |

4b. Continuation Move:

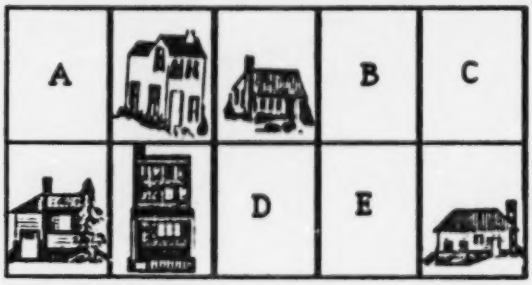
| NS | NNS | NNS | NS |
|---|---|---|---|
| the children are visiting | | children they visit | |
| their uncle for a few days | one week? | uncle few day | they will stay a week? |
| almost two weeks | and when will they return? | when return? | almost two weeks |

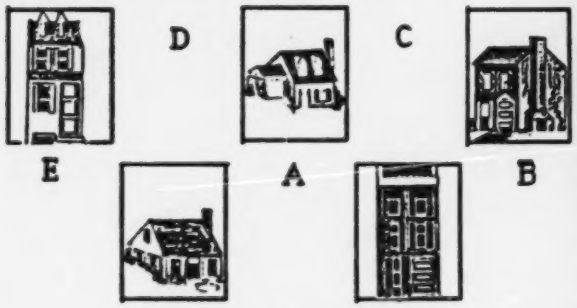
## APPENDIX II

**JIG-SAW: NNS and NS reproduce unseen sequence of (HOUSE) by exchanging uniquely held portions of the sequence.**

**Initial information control shared evenly between NNS and NS.**

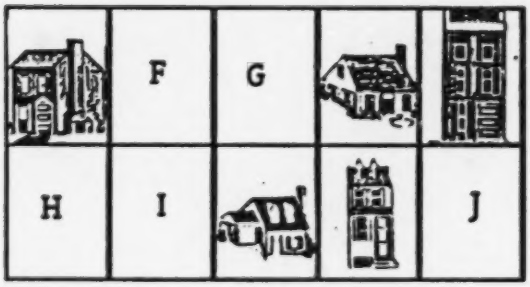
HOUSE SEQUENCE HIDDEN MASTER




Scrambled Houses

PARTICIPANT A PACKAGE



Scrambled Houses

PARTICIPANT B PACKAGE

size reduced for display purposes

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